

ABSTRACT OF THE DISCLOSURE

A high speed, high displacement steering device used for rapid mirror or light source pointing consisting of a pivoting central element and mounting stem, two orthogonally arranged and offset "V" shaped flexure elements connected to two orthogonally arranged moving elements which are driven by electromotive actuators. Said moving elements are connected to a base structure via parallel motion flexures which serve to prevent undesirable bending forces in the linear actuators, while at the same time preventing undesirable translation movements, cross coupling of motion and resonances. A third type of orthogonal rod flexure restrains the remaining axis of translation motion, namely a translation of the central pivoting element in a direction perpendicular to the tilting axes. Piezoelectric, electrostrictive or similar actuators operate either separately or simultaneously to drive the central element in the only two remaining unrestrained tilting axes, via the offset "V" shaped flexures, producing tilt in any commanded direction. A sealing cover containing an elastic diaphragm to accommodate tilt may be added to the outer support structure as required for protection in harsh environments.